

What is claimed is:

1. An electron microscope, comprising:  
a main vacuum chamber housing a stage therein and connected to a vacuum  
pump;  
5 a load lock for loading a specimen into said main vacuum chamber;  
a minicolumn non-translatably positioned inside said main chamber; and  
a vacuum pump situated inside the main vacuum chamber and external to  
and connected to the minicolumn.
2. An electron microscope comprising:  
10 a main vacuum chamber housing a stage therein and connected to a vacuum  
pump;  
a load lock for loading a specimen into said main vacuum chamber; and  
a plurality of minicolumns non-translatably positioned inside said main  
chamber, wherein each of said minicolumns has a lens arrangement consisting essentially  
15 of a plurality of conducting electrodes and at least one insulator interposed between said  
conducting electrodes, and wherein said lens arrangement is of a diameter no larger than  
three centimeters and height of no more than one centimeter.
3. The electron microscope of claim 2, wherein at least one of said  
minicolumns is situated inside the main vacuum chamber at a tilt with respect to a  
20 perpendicular to a surface of the stage.
4. The electron microscope of claim 3, wherein the tilt is variable.